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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,619	07/31/2003	Russell W. Gruhlke	10030720-1	4755

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AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

LU, TONY W

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,619

Applicant(s)

GRUHLKE, RUSSELL W.

Examiner

Tony Lu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/31/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Regarding claims 1, 9 and 15, on page 8, line 5, page 9 line 7, and page 10, line 5, "such that" is indefinite

In claim 9, on page 9, line 8, "photodetector" lacks a proper antecedent basis.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duong US6628884 B2.

Duong discloses a light transfer system comprising: a photodetector array(102) laying in a plane; and a lightpipe which is also an elliptical reflector ( element 10. Note the index of refraction of lightpipe is greater than or equal to about 1.4, read col.4, lines15-25) having a first and second pair of sidewalls and a first and second face( note that said first face is very small in size ), said second pair of sidewalls having an elliptical shape and being coated with aluminum, silver or gold(see col.2 lines 15-25), said first pair sidewalls are planar in shape oriented perpendicular to said plane and said second pair of sidewalls(fig.1),said light pipe enabled light entering said first face of said lightpipe is directed to said second face of said lightpipe, said second face of said lightpipe being substantially parallel and proximate to said plane(fig.3A).

With respect to claims 1,3,5,8,15,17 and 18, although Duong lacks a clear inclusion of the case speckle light being entering the lightpipe, the lightpipe of Duong's system would inherently perform the transmission and/or modulation of the speckle light, however, if not, it would have been obvious to one of the ordinary skill in the art at the time of the invention to modify Duong's system by including a capability of transmitting and/or modulating of speckle light in order to provide a wider application and/or a more usable of the system.

With respect to claims 2 and 16, per the above discussion, Duong discloses an optional relationship between the end surface of the lightpipe and the imaging plane but fails to teach said first face is inclined at an angle with respect to said second face.

Selecting a specific arrangement of the optics elements in an optional system in order to provide a desired signal modulation would have been obvious to one of ordinary skill in the art.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the proposed system of Duong accordingly in order to provide more reflections of the light inside the lightpipe.

With respect to claims 4 and 20, per the above discussion, Duong fails to teach said first pair of sidewalls being optically absorptive.

Although Duong lacks a clear teaching of said first pair of sidewalls being optically absorptive, the inclusion of optical absorptive sidewalls/elements for absorbing unwanted light would have been obvious to one of ordinary skill in the optics art.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify proposed system of Duong accordingly in order to prevent unwanted reflections of light from reaching said photodetector array.

With respect to claims 6 and 19, per the above discussion, the inclusion of a diffraction grating would have been obvious for similar reason as set forth in the discussion of claim 2 above.

With respect to claim 7, per the above discussion, Duong fails to teach said lightpipe is comprised of  $\text{SiO}_2$ .

Although Duong lacks a clear inclusion of  $\text{SiO}_2$ , selecting a known and available material for making an optical element/component would have been obvious to one of ordinary skill in order to provide a desired performance of the lightpipe.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify proposed Duong's system accordingly in order to provide a better light conducting performance of the system.

With respect to claims 9, 10, 13 and 14, per the above discussion, Duong fails to teach said photodetector array is centered on a first focal line of said second pair of sidewalls(elliptical).

Although Duong fails to include a specific related arrangement between said photodetector array and said lightpipe( elliptical reflector ), selecting a particular position and/or arrangement of elements/components of the system in order to provide an easier alignment of the optic elements/components would have been obvious to one of the ordinary skill in the art.

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify proposed Duong's system accordingly in order to provide a more compact design of the system.

With respect to claim 11, per the above discussion, regarding to the further citation of black wax, it would have been obvious for similar reasons set forth in the discussion of claim 4 above.

With respect to claim 12, per the above discussion, the inclusion of a diffraction grating on the second focal line would have been obvious for similar reasons set forth in the discussion of claim 6 above.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Miller et al US5659397 disclose an ellipsoidal chamber having a reflective interior surface, a first focus, an opposite second focus and a detector.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Lu whose telephone number is 5712728448. The examiner can normally be reached on M-F 9:00am- 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Davide Porta can be reached on 5712722444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TL

  
Que T. Le  
Primary Examiner